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FINAL

**RCRA FACILITY INVESTIGATION WORK PLANS
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO**

ADDENDUM 3

**ADDITIONAL INVESTIGATIONS AT
SWMU 9**

CONTRACT TASK ORDER 0173

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Prepared For:

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1.0 INTRODUCTION

Naval Station Roosevelt Roads was issued a RCRA Permit to operate a hazardous waste storage facility in October, 1994. The permit contained provisions for "Corrective Action" at the Station in accordance with the Hazardous and Solid Waste Amendments (HSWA) of 1984. Among the varied requirements was one which mandated RCRA Facility Investigations (RFIs) at a number of Solid Waste Management Units (SWMUs) identified in the permit. RFIs are designed to assess ongoing or historical releases of hazardous waste or hazardous constituents from a unit.

The Station took the list of SWMUs and combined them into Operable Units (OUs) which addressed groups of SWMUs having similar location, use, or expected potential contaminants. Investigatory work for OU 2, which contains SWMU 9 as undertaken in 1996 and the results were provided to the EPA in a report entitled "RCRA Facility Investigation Report for Operable Unit 2, Naval Station Roosevelt Roads, Ceiba, Puerto Rico" (September 1996).

The EPA, Region II, reviewed the document and provided comments in a March 4, 1997 letter. It is the intent of this brief workplan addendum to address the EPA comments which required additional field work.

The scope of investigatory work described in subsequent sections of this addendum only addresses the actual work elements at the site. All the other elements normally comprising Work Plans (e.g., Health and Safety Plan, Quality Assurance Project Plans) rely on the Final RCRA Facility Investigation Work Plan (Baker, September, 1995). All sampling will be conducted in accordance with the applicable SOP contained in Appendix B of the Data Collection Quality Assurance Plan. [Note: This document is Addendum 3 to the Work Plans. Addendum 1 addressed the Tow Way Fuel Farm (OU2) investigations and Addendum 2 addressed additional investigations required at OUs 1, 6 and 7.]

2.0 ADDITIONAL INVESTIGATIONS

2.1 Introduction

Section 2.0 provides details of the proposed additional investigations for SWMU 9. Included in the discussion are details of the proposed investigatory scope, a detailed rationale which explains each element of the scope and a description of the intended data use.

In addition, a number of general considerations related to the overall investigation are discussed in this section.

2.2 SWMU 9 (Tanks 212 - 217)

EPA comments indicate the need for additional test pit excavation and monitoring well installation at Areas A and B of SWMU 9. This section addresses these investigations.

2.2.1 Test Pit Excavation

A total of five investigatory excavations are proposed. The locations for these are shown on Figure 2-1. They will be designated:

- 9TP07A + B
- 9TP09A
- 9TP02A, and
- 9TP01A

9TP07A + B

This investigation will actually consist of two test trenches approximately 25 feet long. The excavations have been arranged such that one is west of the identified location of the former sludge disposal pit and the other is north. This array will ensure that any release from the pit can be identified since, based on surrounding topography, a radial movement of sludge could be possible to the west and north.

9TP09A

A test trench approximately 25 feet long will be excavated on a southwest-northeast axis near 9TP09 as suggested in the EPA comment letter. The trench will be started approximately 50 feet away from the original pit.

9TP02A

Figure 2-1 shows the approximate orientation of the original excavation. As suggested in the EPA comment letter, a test trench approximately 25 feet long will be excavated on a southeast-northwest axis which will be generally perpendicular to the original trench. The new trench will be started approximately 25 feet away from the original.

9TP01A

9TP01 was originally intended to investigate the reported disposal pit location because the actual pit area is relatively inaccessible. Efforts will be made to achieve a location closer to the reported pit during this investigation. Using a smaller piece of equipment than was available during the first field program may enhance this capability. Upon reaching the location, a test pit will be excavated through the reported disposal pit.

Two subsurface soil samples will be collected from each test pit/trench and analyzed for BTEX, TPH, and RCRA metals. One sample will be collected of the disposed sludge/or other apparent contamination and a second sample for the soil underlying the sludge material (just above the water table). Each test pit/trench will be excavated to an estimated depth of 12 to 14 feet unless groundwater or bedrock is encountered first. At a minimum, excavation will continue to a point at least two feet below the buried sludge if found. [Note: This approach parallels that found in the approved RFI Work Plans]. Should no contamination be apparent or should no groundwater be present, two representative samples of the material in the test pit near bottom will be collected for analysis.

Prior to test pit excavation, plastic sheeting will be placed on the ground to either side of the test pit/trench. This procedure will allow for potentially contaminated soil to be kept separate from noncontaminated soil. Upon completion of sampling activities, all excavated soils will be returned to

the test pit replacing the soil in the same order in which it was removed (i.e., bottom soil placed first). All plastic sheeting will be discarded as nonhazardous debris.

2.2.2 Groundwater Investigations

A total of three new monitoring wells will be installed during the SWMU 9 additional investigations. One new well will be placed approximately 450 feet northeast of 9MW02 along the access road to Area B (to be designated 9MW02N). Another new well will be installed approximately 450 feet southeast of 9MW02 along Manika Bay Road (to be designated 9MW02S). The final well will be installed within 25 feet of the 9MW02 and will be designated 9MW02R. This well will replace 9MW02 which will be abandoned by overdrilling and backfilling with cement/bentonite grout.

Each boring will be continuously sampled. A minimum of one soil sample will be retained for laboratory analysis which will be obtained at the groundwater table. A maximum of one additional soil sample from each boring will be analyzed if there is any evidence (visual, olfactory or instrumental [PID]) of contamination. The soil samples submitted will be analyzed for BTEX, TPH and the RCRA metals.

Upon completion of the boring to anticipated final depth, the augers will be left in the hole a minimum of 12 hours to allow the groundwater level to equilibrate. This will allow the true groundwater elevation to become apparent which will be used to determine the appropriate elevation for the well screen. It is the intent to screen the well such that a minimum of two feet of screen extends above the water table. This positioning will provide unimpeded access to the well casing for any LNAPL which may be present in the subsurface.

The three wells will be fully developed and will be subjected to in-situ hydraulic conductivity tests. Following development and testing, the wells will be sampled and the samples submitted for laboratory analysis of BTEX and RCRA metals (both total and dissolved). Temperature, pH, and specific conductance will be measured in the field during sampling.

A single set of groundwater elevations will be obtained from all the wells at SWMU 9. This will provide a time equivalent picture of groundwater occurrence in the subsurface which will be utilized to help understand groundwater flow direction and rate.

2.3 Miscellaneous Investigation Considerations

This section contains some miscellaneous investigations and related work that are required for the work proposed in the previous sections.

2.3.1 Surveying

All sampling locations will be flagged in the field and will be surveyed using established control. This surveying will be performed by the firm which did the previous work to ensure that the same level of survey quality and detail is attained.

2.3.2 Data Validation

All laboratory data generated by these investigations will be subjected to independent, third party, validation. EPA Region II Data Validation SOPs will be followed. The same firm which has performed data validation for the previous RFI steps will continue. This will ensure that the same techniques are followed and that an equivalent review of the data is performed.

2.3.3 Laboratory Analysis

All laboratory analyses will be performed in accordance with the methodologies contained in the approved Final RCRA Facility Investigation, Naval Station Roosevelt Roads, Puerto Rico (Baker, September, 1995) Work Plans.

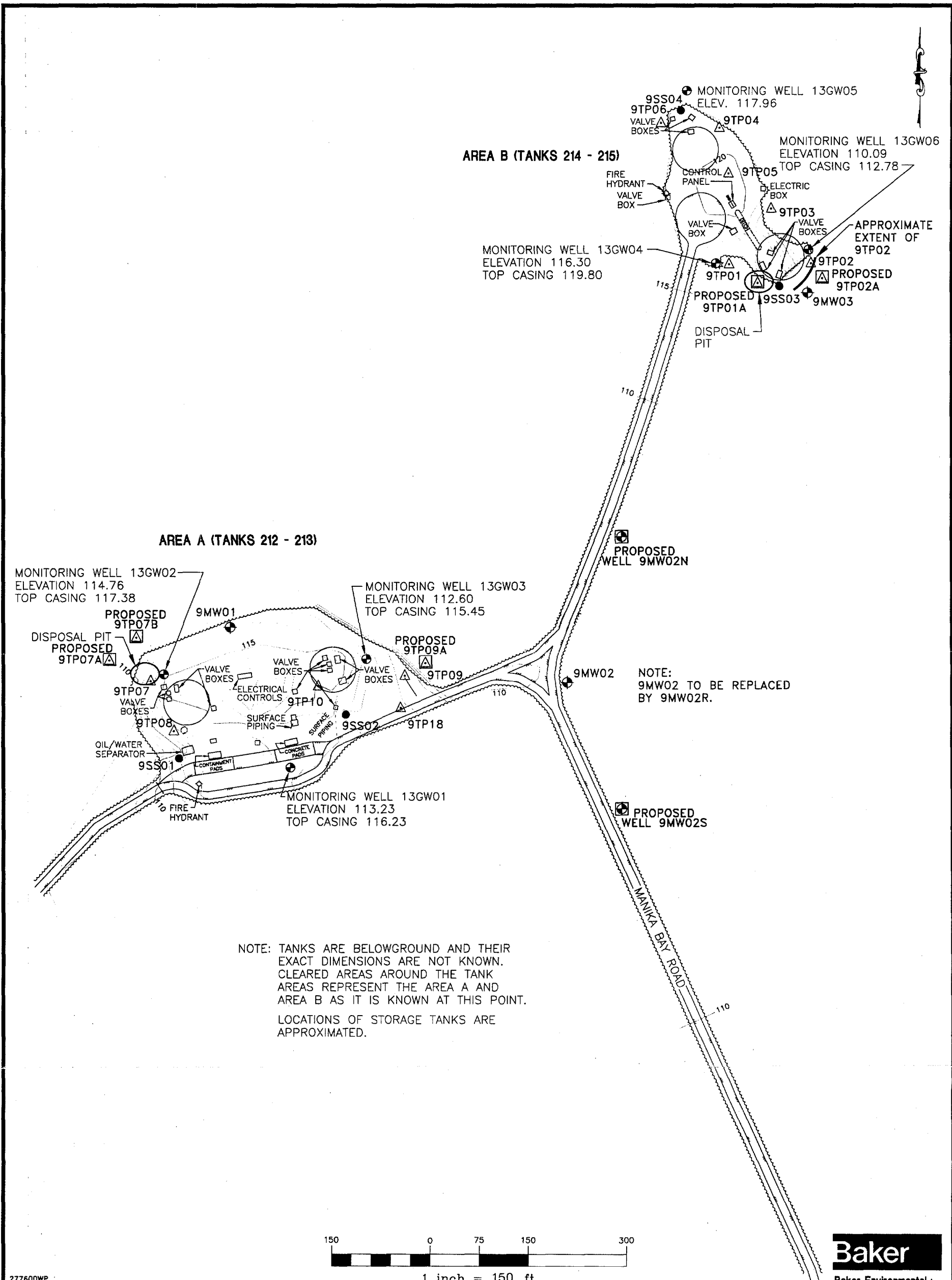
2.3.4 Investigation Derived Waste (IDW)

The material removed from the excavated pits/trenches will be staged on plastic sheeting and, at the completion of sampling and logging, will be returned to the excavations by placing the spoil in the same subsurface horizon as much as possible.

Drill cuttings and development/sampling derived waters will be separately drummed and held for disposal once the analytical results are finalized.

2.3.5 Standard Operating Procedures (SOPs)

All the SOPs required to complete the investigations described herein are provided in the Final RFI Work Plans.



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LEGEND

- △ TEST PIT LOCATION
- SURFACE SOIL LOCATION
- ⊕ EXISTING MONITORING WELL LOCATION
- ⊕ NEWLY INSTALLED MONITORING WELL LOCATION
- - - SURFACE ELEVATION CONTOUR
- APPROXIMATE LOCATION OF DISPOSAL PIT

FIGURE 2-1
ADDITIONAL INVESTIGATION SAMPLING LOCATIONS
SWMU 9, AREAS A AND B
TANKS 212 - 215
NAVAL STATION ROOSEVELT ROADS
PUERTO RICO

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3.0 SCHEDULE

Figure 3-1 shows the projected schedule for these investigations and report revision.

FIGURE 3-1
RCRA Facility Investigation Work Plans - Naval Station Roosevelt Roads
Additional Investigations at SWMU 9 - CTO 0173 - Schedule

